

vicinity of each tank in order to preserve segregation of cargo systems, in lieu of common header piping;

(4) A means must be provided to eliminate liquid condensate which may collect in the system, such as draining and collecting liquid from each low point in the line;

(5) Vapor collection piping must be electrically bonded to the hull and must be electrically continuous; and

(6) An inerted tankship must have a means to isolate the inert gas supply from the vapor collection system. The inert gas main isolation valve required by SOLAS 74, as amended, chapter II-2, Regulation 62.10.8 may be used to satisfy this requirement.

(b) The vapor collection system must not interfere with the proper operation of the cargo tank venting system.

(c) An isolation valve capable of manual operation must be provided at the vessel vapor connection. The valve must have an indicator to show clearly whether the valve is in the open or closed position, unless the valve position can be readily determined from the valve handle or valve stem.

(d) The last 1.0 meter (3.3 feet) of vapor piping before the vessel vapor connection must be:

- (1) Painted red/yellow/red with:
  - (i) The red bands 0.1 meter (0.33 feet) wide, and
  - (ii) The middle yellow band 0.8 meter (2.64 feet) wide; and
- (2) Labeled "VAPOR" in black letters at least 50 millimeters (2 inches) high.

(e) Each vessel vapor connection flange must have a permanently attached 0.5 inch diameter stud at least 1.0 inch long projecting outward from the flange face. The stud must be located at the top of the flange, midway between bolt holes, and in line with the bolt hole pattern.

(f) Each hose used for transferring vapors must:

- (1) Have a design burst pressure of at least 25 psig;
- (2) Have a maximum allowable working pressure of at least 5 psig;
- (3) Be capable of withstanding at least 2.0 psi vacuum without collapsing or constricting;
- (4) Be electrically continuous with a maximum resistance of ten thousand (10,000) ohms;

(5) Have flanges with:

(i) A bolt hole arrangement complying with the requirements for 150 pound class ANSI B16.5 flanges, and

(ii) One or more 0.625 inch diameter holes in the flange located midway between bolt holes and in line with the bolt hole pattern;

(6) Be abrasion resistant and resistant to kinking; and

(7) Have the last 1.0 meter (3.3 feet) of each end of the vapor hose marked in accordance with paragraph (d) of this section.

(g) Vapor hose handling equipment must be provided with hose saddles which provide adequate support to prevent kinking or collapse of hoses.

[CGD 88-102, 55 FR 25446, June 21, 1990, as amended by CGD 95-072, 60 FR 50462, Sept. 29, 1995; CGD 96-041, 61 FR 50727, Sept. 27, 1996]

**§ 39.20-3 Cargo gauging system—TB/ALL.**

(a) Each cargo tank of a tank vessel that is connected to a vapor collection system must be equipped with a cargo gauging device which:

(1) Provides a closed gauging arrangement as defined in § 151.15.10 of this chapter that does not require opening the tank to the atmosphere during cargo transfer;

(2) Allows the operator to determine the liquid level in the tank for the full range of liquid levels in the tank;

(3) Indicates the liquid level in the tank at the location where cargo transfer is controlled; and

(4) If portable, is installed on the tank during the entire transfer operation.

(b) Except when a tank barge complies with § 39.20-9(a) of this part, each cargo tank of a barge must have a high level indicating device that:

(1) Provides a visual indication of the liquid level in the cargo tank when the cargo level is within 1.0 meter (3.28 feet) of the tank top;

(2) Has the maximum liquid level permitted under § 39.30-1(e) of this part at even keel conditions conspicuously and permanently marked on the indicating device; and

(3) Is visible from all cargo control areas on the tank barge.